

Activity #5: Double Puzzles

Questions

Section 2: About Math in Early Childhood

Question #1: **Why should teachers support mathematics development in early childhood classrooms?**

There are many great reasons to support mathematics development in early childhood. Most of all, young children are naturally curious about numbers, shapes, patterns, size, and many other mathematics concepts. Teachers can and should support children's natural curiosity! It's also true that mathematics is everywhere, and mathematics competence is important for success in school and in many professions later in life. Early childhood teachers can help children develop a strong foundation in informal mathematics by providing opportunities to explore mathematics concepts and to use mathematics as a tool for problem solving.

- Mathematics is everywhere, and children are already developing informal mathematical concepts by the time they are three years old.
- Mathematics competence is important to success in later schooling and in life.

Also, according to a Joint Position Statement adopted in April 2002 by The National Council of Teachers of Mathematics (NCTM) and the National Association for the Education of Young Children (NAEYC):

"... high-quality, challenging, and accessible mathematics education for 3- to 6-year-old children is a vital foundation for future mathematics learning. In every early childhood setting, children should experience effective, research-based curriculum and teaching practices."

Question #2: **How can teachers support mathematics development in early childhood classrooms?**

Teachers in early childhood classrooms can support mathematics development by providing planful, playful, and purposeful opportunities for young children to explore, discuss, and reflect on mathematics ideas every day.

Begin with these four steps:

1. Establish a math center.
2. Put math manipulatives in your centers and refresh them regularly.
3. Integrate mathematics into your regular daily routines.
4. Plan and implement focused math lessons with small groups of children.

For instruction to be effective, it is important that teachers set developmentally appropriate learning objectives, follow children's progress, and plan activities accordingly.

Question #3: What is developmentally appropriate practice in mathematics?

Nationally recognized experts in early childhood advocate the implementation of developmentally appropriate activities in mathematics. Developmentally appropriate practice means implementing a coherent set of activities that take into consideration age-related abilities, individual learning styles, individual temperaments, and cultural differences.

CIRCLE recommends a planful, playful, and purposeful approach to all instruction, so that meaningful mathematics activities are thoughtfully designed and playfully implemented.

Knowing your children well and understanding the general abilities of children at this age is vital to providing developmentally appropriate instruction. For early childhood, developmentally appropriate practice also means embedding mathematics concepts into meaningful activities.

Question #4: What is the difference between formal and informal mathematics?

Early childhood is a time to explore informal mathematics. Informal learning includes discovering mathematical concepts in both home and school environments. Children learn informally through manipulating objects, learning mathematics language, and discussing mathematical ideas and concepts. Children also learn mathematics in a formal setting through interactions with teachers in small groups. Formal mathematics content is usually taught formally and cannot be learned informally, such as learning about numerals and abstract thinking.

Question #5: What are focused math lessons?

Focused mathematics lessons are planned instructional activities targeting specific mathematics concepts. In early childhood, these lessons should be playful, meaningful, and thoughtfully designed to provide systematic support of children's mathematics development.

CIRCLE recommends that early childhood teachers do two 10–15-minute, focused mathematics lessons with small groups of children each day, one in the morning and one in the afternoon. If teachers spend ten minutes with each small group, they should be able to reach each child with focused mathematics instruction every few days.

Question #6: What is the role of assessment in mathematics for early childhood?


Assessment in early childhood can be used for planning purposes. It is vital that activities meet the needs of all individuals in a classroom. By following children's progress, teachers can assess the effectiveness of their lessons, modify them as needed, and continue to improve their instruction as they find ways to support children's mathematics development.

Keeping track of children's progress throughout the year helps to inform teachers' decisions about what instruction is appropriate at any given time. It also helps teachers know which children may need extra help and which need more of a challenge.

Puzzle for Question #1: Why should teachers support mathematics development in early childhood classrooms?

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How can teachers support mathematics development in early childhood classrooms?



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Puzzle for Question #3:

What is developmentally appropriate practice in mathematics?

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Puzzle for Question #4:

What is the difference between formal and informal mathematics?

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Puzzle for Question #5:

What are focused math lessons?

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Puzzle for Question #6:

What is the role of assessment in mathematics for early childhood?

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